

WVU IACUC Guideline: Biomedical Research - Primary Enclosure Space and Density

Purpose

The *Guide for the Care and Use of Laboratory Animals* and the Animal Welfare Regulations provide space and housing density recommendations based on species. This guideline outlines the recommendations and considerations when housing animals at West Virginia University for biomedical research.

Guidelines

At a minimum animal **must** have enough space to express their natural postures and postural adjustments without touching the enclosure walls or ceiling (turn around and have access to food/ water). There **must** be sufficient space to rest away from soiled areas. Floor space taken up by food bowls, water containers, litter boxes, and enrichment devices should not be considered part of floor space.

Housing Considerations:

- Age and Sex of animal
- Number of animals to be co-housed
- Duration of accommodation
- Intended use for animal
- Special needs of the species
- Breeding animals may require more space

RODENTS – Minimum Space Recommendations

Animal	Weight (g)	Floor Area (in ²)/Animal	Height (in)
Mouse	<10	6	5
	10-15	8	
	15-25	12	
	>25	≥15	
	Female + Litter	51	
Rat	<100	17	7
	100-200	23	
	200-300	29	
	300-400	40	
	400-500	60	
	>500	≥70	
	Female + litter	124	
Hamsters*	<60	10	6
	Up to 80	13	
	Up to 100	16	
	>100	≥19	

	Female+ Litter	121 (Female + Litter must be housed alone in cage)	
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*Maximum of 13 animals per/enclosure

Housing Density for OLAR Rodent Cages

Animal/Cage Type	Cage Size (in ²)	Maximum Number of Animals
Mouse ventilated Cage	77.5	5 mice >25g Mouse breeding pair (2 adults) + one unweaned litter
Rat ventilated Cage	140	2 rats > 500g Female+ one unweaned litter (rat)
High Containment ventilated cages	142	9 mice >25g

Minimum Space Recommendations for Other Species

Animals	Animals/Enclosure	Weight (kg)	Floor area (ft ²)/anima	Height
Rabbits	N/A	<2	1.5	16
		Up to 4	3	
		4-5.4	4	
		>5.4	≥ 5	
Pigeons	N/A	N/A	0.8	Sufficient to stand erect with feet on floor
Sheep	1	<25	10	Able to stand erect
		25-50	15	
		>50	≥20	
	2-5	<25	8.5	
		25-50	12.5	
		>50	≥17	
	>5	<25	7.5	
		25-50	11.3	
		>50	≥15	
Swine	1	< 25	12	Able to stand erect
		25-50	15	
		50-100	24	
		100-200	48	
		>200	≥60	
	2-5	< 25	6	
		25-50	10	
		50-100	20	
		100-200	40	

		>200	≥52	
	>5	Up to 25	6	
		25-50	9	
		50-100	18	
		100-200	36	
		>200	≥48	

OLAR Cage/Pen Sizes

Species	Cage Type	Floor Area (ft ²)	Height (inches)	Number of Animals
Rabbits	Single cage	5	18	1 adult Rabbit
	Double cage	10		2 adult Rabbits
Pigeon	Single cage	1.75	25	1 pigeon
	Double	3.5		2 pigeons
Large animal Pens (Sheep and Pigs)	Pen (suspended flooring)	47	Open	2 adult sheep
Sheep Pasture #1	Outdoor	0.5 acres	N/A	
Sheep Pasture #2	Outdoor	2,000	N/A	

References

1. [Animal Welfare Act and Animal Welfare Regulations](#), United States Department of Agriculture, 2017.
2. [Guide for the Care and Use of Laboratory Animals](#), National Research Council, 2011.